Claims 1-24 (cancelled)

25. (new) A method for identifying compounds that bind to a target of interest, comprising:

selecting a member of a first set of ligands which non-covalently binds to a first binding site of a target biomolecule;

selecting a member of a second set of ligands which non-covalently binds to a second binding site of the target biomolecule;

forming a compound by chemically linking the member of the first set of ligands to the member of the second set of ligands;

contacting the compound with the target; and

detecting the non-covalent binding of the compound to the target by mass spectrometry,

wherein the target biomolecule is selected from a polypeptide, protein, DNA, RNA or polysaccharide.

26. (new) The method of claim 25 wherein binding of the member of the first set of ligands to the first binding site of the target, or binding of the member of the second set of ligands to the second binding site of the target, is measured by mass spectrometry.

27. (new) The method of claim 25 wherein the member of the first set of ligands and the member of the second set of ligands each have a dissociation constant, K_d, equal to 500 μM or less.

28. (new) The method of claim 27 wherein the dissociation constant of the compound binding to the target is less than the dissociation constant of the member of the first set of ligands or the dissociation constant of the member of the second set of ligands binding to target.

29. (new) The method of claim 25, wherein the first binding site is the same as the second binding site.

30. (new) The method of claim 25, wherein the first binding site is not the same as the second binding site.

31. (new) The method of claim 25 where the protein is selected from cell surface receptor proteins, soluble receptor proteins, proteases, matrix metalloproteinases, clotting factors, serine/threonine kinases, dephosphorylases, tyrosine kinases, bacterial enzymes, fungal enzymes, viral enzymes, signal transduction proteins, transcription factors, proteins associated with DNA and/or RNA synthesis or degradation, immunoglobulins, hormones, and cytokine receptors.

32. (new) The method of claim 31 where the cytokine receptor is selected from erythropoietin/EPO, granulocyte colony stimulating receptor, granulocyte macrophage colony stimulating receptor, thrombopoietin (TPO), IL- 1, IL-2, IL-3, IL-4, IL-5, IL-6, IL- 10, IL- 11, IL- 12, growth hormone, prolactin, human placental lactogen (LPL), CNTF, octostatin, RANTES, MIPI, IL-8, insulin, insulin-like growth factor I (IGF-1), epidermal growth factor (EGF), heregulin-a and heregulin-b, vascular endothelial growth factor (VEGF)1, 2, and 3, placental growth factor (PLGF), tissue growth factor (TGF-(X and TGF-P), bone morphogenic factor, folical stimulating hormone (FSH), luteinizing hormone (LH), tissue necrosis factor (TNF), and apoptosis factor.

33. (new) The method of claim 31 where the dephosphorylase is protein tyrosine phosphatase 1*b* (PTP1*b*).

34. (new) The method of claim 31 where the matrix metalloproteinase is stromelysin.